

## *Textbook of Cancer Epidemiology*

Hans-Olov Adami, David Hunter, and Dimitrios Trichopoulos, eds.  
Oxford University Press, Oxford,  
2002. ISBN: 0-19-510969-4. Price:  
\$76.50

**From Trisha Hartge:** The *Textbook of Cancer Epidemiology* fits nicely on the epidemiology instructor's bookshelf for classroom use. Its editors have provided a book principally to teach. By comparison, Schottenfeld and Fraumeni's *Cancer Epidemiology and Prevention*,<sup>1</sup> now going into its third edition, remains the definitive large text. The newer (and slimmer) textbook is a more didactic companion, well suited to a course for public health students who have had an introduction to basic epidemiology.

The new text is a hybrid, somewhere between the typical multiauthor medical textbooks and the 1-author epidemiology textbooks. This synthesis has been accomplished by including one of the editors as a coauthor of each chapter and by following a rather strict common outline to achieve a consistent style. The similarity of style and approach across the chapters promotes flexible use, for example, instructors can easily vary the assigned chapters from year to year or create a short course on a focused topic.

The introductory portion follows the terminology and emphasis of Rothman and Greenland's *Modern Epidemiology*<sup>2</sup>; however, the main text would fit well in any curriculum. On the whole, each organ-specific chapter effectively covers the major issues, including the ubiquitous problems of conflicting data and unresolved issues. For instance, the chapter on breast cancer conveys the sense that although epidemiology has produced a large body of information about risk factors, we have not yet captured the fundamental etiology. The very brief overview of dozens of risk factors gives breast cancer epidemiology at a glance, suitable for a novice reader. For the reader interested in

greater depth, the cartoon of estrogen pathways and gene polymorphisms controlling the hypothesized biologic pathways is simple enough to follow and yet complex enough to convey the difficulties in understanding the pathways that mediate hormones.

The structured outline of site-specific chapters generally works to the reader's advantage, although it can create a false sense that our understanding of the causes of various cancers is more uniform than it really is. Although we know, for instance, that human papilloma virus causes the overwhelming majority of cancers of the uterine cervix, the chapter on cervical cancer begins with a summary of the literature on tobacco, diet, and hormones. Those factors can affect risk (perhaps through susceptibility to the papilloma virus), but the more natural order of presentation would have been to explain human papilloma virus first and then the evidence on potential cofactors.

The book aims to reach not just students in public health or medical school, but a larger audience in medicine, public health, and biology. For readers interested in an intermediate level of detail, this book fills the bill nicely. I recommended it to a Yale undergraduate working as a summer intern in epidemiology at the National Cancer Institute, whose comments follow.

**From John Mission:** What is cancer? What is epidemiology? As an undergraduate student interested in medicine and public health, I needed some background before delving into the specifics of cancer epidemiology. The *Textbook of Cancer Epidemiology* is especially effective in answering these questions. A chapter on "The Origin of Cancer" offers an excellent introduction to the concepts of cancer etiology and development. Students with even a single semester of introductory college biology would be comfortable reading this chapter.

An equally essential chapter, "Concepts in Cancer Epidemiology and

Etiology," lucidly explains the techniques and principles of epidemiology. The authors describe the various types of study designs and their strengths and shortcomings in language accessible to students without a background in epidemiology. The last sections of the chapter discuss how to interpret the results of epidemiologic studies, offering clear principles and logically sound sets of criteria with which to evaluate studies at all levels, from individual case studies to metaanalyses.

I compared *Textbook of Cancer Epidemiology* with the second edition of *Cancer Epidemiology and Prevention* for some specific cancers I have been studying. The leukemia section of *Cancer Epidemiology and Prevention* includes a more detailed description of the disease and cites 20 more pages of references than does *Textbook of Cancer Epidemiology*, whereas the latter maintains a more concise, student-friendly presentation. I particularly enjoyed its clinical summary in the beginning of each section on site-specific cancers; this piqued my interest more than the chapter introductions in the longer text.

One advantage of Schottenfeld and Fraumeni's textbook is the inclusion of possibilities for future research for specific cancers. The addition of such forward-looking sections would serve the *Textbook of Cancer Epidemiology* well. In every other respect this textbook will serve students at any level as a useful primer for cancer epidemiology.

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## Evidence-Based Public Health

Ross C. Brownson, Elizabeth A. Baker, Terry L. Leet, and Kathleen N. Gillespie. Oxford University Press, New York, 2003. ISBN: 0195143760. 256 pp. Price: \$39.95.

"Evidence-based medicine" is a well-established movement focused on the accumulation of evidence from controlled trials. This is not to say that observational studies are not useful in medicine; to the contrary, they are preferred for studying the accuracy of a diagnostic test or for identifying risk factors of disease. However, when it comes to evaluating the efficacy of a therapy, there is no substitute for the randomized trial.<sup>1</sup>

Unfortunately, the level of evidence available in public health is not nearly so well developed. This is apparent in a new book, *Evidence-Based Public Health*, by Brownson and colleagues. The authors necessarily take a broad approach to "evidence." They provide excellent discussions of how to access a range of data for decisions about public health programs, and how to implement and evaluate those programs through a range of study designs. Although randomized trials are mentioned as the design of "greatest suitability," it is revealing that they are not discussed in detail. Only 3 pages are devoted to meta-analyses.

The fact of the matter is that randomized, controlled trials are seldom used to assess public health interven-

tions. More commonly, public health programs are based on "good ideas." For example, programs to reduce maternal mortality incorporate the training of traditional birth attendants and prenatal risk screening, even though evidence for their efficacy is limited.<sup>2</sup>

The occasional experimental studies that have been conducted in public health deserve comment. Such studies often use cluster or group randomization procedures, which are often more feasible in trials of public health interventions than individual randomization.<sup>3</sup> It is not uncommon for these studies to conclude that good ideas do not necessarily work. Randomized trials of smoking prevention and cessation programs have confirmed the efficacy of individual behavioral counseling but show a disappointing lack of efficacy of community interventions.<sup>4,5</sup> On a more positive note, the fact that such studies have been successfully conducted shows the potential for greater use of randomized, controlled trials in the evaluation of public health interventions.

It is reasonable to assume that higher-quality evidence will improve the practice of public health, just as it has the practice of medicine; but this, too, is a testable question. A recent randomized, controlled trial from Norway shows the difficulty in disseminating evidence-based practice among public health practitioners.<sup>6</sup> One hundred and fifty public health physicians were randomly assigned either to an intervention group or a control group. The intervention included a workshop on evidence-based public health, a newsletter, access to databases, and an electronic discussion list. The control group received only a letter informing them that they had access to these sources of information. The intervention failed to change public health physicians' behavior as

measured by their use of evidence from the literature. This study suggests that even when evidence-based data for improving public health are at hand, we will need strong behavioral interventions to extend these benefits.

In short, public health lags far behind medicine in implementing the randomized trial. This gap is apparent in the book by Brownson and colleagues, which deals with the wide range of evidence, most of it observational, on which public health decision-makers must rely. Good books such as *Evidence-Based Public Health* help make the best of the data at hand, but they also show us (if only by implication) where the gaps lie. We should not overlook opportunities for imaginative trials in public health.

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